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CANADA

EXAMINER

PHAN, TRI H

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,154

Applicant(s)

ROBERTS ET AL.

Examiner

Tri H. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 16-29 is/are rejected.
- 7) ☒ Claim(s) 14, 15, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on January 11th, 2006. Claims 1-31 are now pending in the application.

Drawings

2. The drawings are objected to because all blocks in Figures 1-4 should be labeled with descriptive legends based on 37 C.F.R. § 1.84(o) for supporting the objection in the Rules and M.P.E.P. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 and 16-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **MacDonald, Robert I.** (U.S.2002/0159681; hereinafter refer as '**MacDonald**') in view of **McGill, Richard T.** (U.S.5,436,886; hereinafter refer as '**McGill**').

- In regard to claims 1 and 16, **MacDonald** discloses in Figs. 4-7 and in the respective portions of the specification, the *network node and system adapted to control protection switching in the node of the communications network* ('optical protected crossconnect'; For example see Fig. 4; Abstract), *the node comprising a multi-stage switch fabric* (For example see Fig. 5; pages 1-2; para [0009]) *having the first stage including the respective plurality of stage-1 switch elements* ('first external stage'; For example see Fig. 6; page 2, paras [0011-0015]), *the*

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system comprises the interface ('input port interface') operatively coupled to a set of two or more stage-1 switch elements, the interface being adapted to aggregate a plurality of channels of the communications network into the set of stage-1 switch elements (For example see Fig. 4A, 5A; page 2, para [0021]; page 4, para [53]) and the toggle ('switches 125 and 142') adapted to control the set of stage-1 switch elements to selectively map traffic between a middle stage of the switch fabric and a selected one of the plurality of channels (For example see page 2, para [0021]; pages 2-3, para [0038]). MacDonald fails to explicitly disclose the "selected one of the set of any two of the plurality of channels". However, such implementation is known in the art.

For example, **McGill** discloses in Figs. 1-12 and in the respective portions of the specification the switch fabric with multiple stage switching (For example see Fig. 12) in dual switch plane operation (For example see Fig. 1; Abstract); wherein, when detecting the failure, the tagging means ("*toggle*") switches the traffic from one to another redundant multiplexer 'AX' (For example see Figs. 3-10; col. 5, line 58 through col. 6, line 7; wherein each AX, e.g. AX0 or AX1, receives signals from line cards LC0 and LC1, e.g. "*selected one of the set of any two of the plurality of channels*").

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonald's** switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- Regarding claims 2 and 17, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonald** further

discloses wherein the *first stage comprises one of the input stage and the output stage of the multi-stage switch fabric* (For example see Fig. 6; page 3, para [51]).

- In regard to claims 3 and 18, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonald** further discloses wherein the *set of two or more stage-1 switch elements comprises less than all of the stage-1 switch elements of the multi-stage switch fabric* (For example see Fig. 5 shows 7 stage-1 elements; wherein each interface is connected to 3 stage-1 elements, which is less than 7).

- Regarding claims 4-5 and 19-20, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonald** and **McGill** further discloses wherein the *set of any two of the plurality of channels comprises a working channel ('working plane') and a protection channel ('protection plane') of the communications network* (For example see Figs. 2-3; col. 4, line 40 through col. 5, line 47; wherein "*the protection channel is provisioned and associated with the working channel*" through the use of symmetric and asymmetric operation as claimed in the claim invention 5 and 20).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonald**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 6 and 21, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonald** and **McGill** further discloses wherein the *protection channel is dynamically allocated in response to detection of the network resource failure affecting traffic flow through the working channel* (For example see **McGill**: Figs. 3-10; col. 8, lines 7-26).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonald**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- Regarding claims 7-9 and 22-24, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonald** and **McGill** further discloses *wherein the interface comprises at least two port cards, each port card being adapted to convey traffic between at least two respective channels ('LC' line card 0 and 1) of the communications network and the set of stage-1 switch elements and wherein two or more interfaces are operatively coupled to respective sets of stage-1 switch elements* (For example see **McGill**: Figs. 1-10).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonald**'s switch fabric, with the motivation being to utilize the dual plane

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mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 10 and 25, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonald** further discloses *wherein the respective sets of stage-1 switch elements are non-overlapping* (For example see page 2, para [0010]; wherein the input optical signals are switching to a plurality of locations in a non-blocking manner, e.g. no overlapping signal connection at the port modules) and *wherein the number of stage-1 switch elements within each set is the same* (For example see Figs. 5, 5A).

- Regarding claims 11-13 and 26-27, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonald** further discloses *wherein the number of stage-1 switch elements within each set is the same* (For example see Figs. 5, 5A).

McGill also discloses *wherein the multi-stage switch fabric comprises a plurality of parallel switch cards ('port card') having the respective plurality of stage-1 switch elements ('AX0 and AX1') corresponding set of two or more stage-1 switch elements of each one of the plurality of parallel switch cards* (For example see Figs. 1-10).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with parallel port cards and dual switch plane as taught by **McGill** in the **MacDonald**'s switch fabric, with the motivation being to utilize

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the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 28-29, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonald** and **McGill** further discloses *wherein the set of stage-1 switch elements comprises the corresponding set of stage-1 switch elements ('AX0 and AX1) and switch element ('tagging means') of each one of the plurality of parallel switch cards* (For example see Figs. 2-3).

Response to Amendment/Arguments

5. Applicant's arguments filed on January 11th, 2006 with respect to claims 1-13 and 16-29 have been fully considered but they are not persuasive..

Pages 8-9 of applicant's REMARKS, applicant argues MacDonald fails to disclose the "interface ... and a toggle adapted to control the set of stage-1 switch elements to selectively map traffic...". Examiner respectfully disagrees. In figures 4-5, MacDonald does provide the input/output ports (elements 122a-d) and protection port (element 140), which couple to the crossconnect submatrix (elements 122) in the external module at external stage (element 104) for conveying input/output signals through the multiple stage crossconnections switch, e.g. 'input port interface' or "interface", as disclosed in figures 4-4A; page 2, para [0021]; page 3, para [0043]; and wherein the selector switch ("toggle"), e.g. the redundancy switch (element 125) and protection switch (element 142), selects the incoming signal to be handled such as switching or rerouting port as disclosed in pages 2-3, para [0038]; page 3, para [0043]; but fails to explicitly

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disclose “*selected one of the set of any two of the plurality of channels*”. However, such implementation is known in the art. McGill discloses the switch fabric with multiple stage switching (For example see Fig. 12) in dual switch plane operation (For example see Fig. 1; Abstract); wherein, when detecting the failure, the tagging means (“*toggle*”) switches the traffic from one to another redundant multiplexer ‘AX’ (For example see Figs. 3-10; col. 5, line 58 through col. 6, line 7; wherein each AX, e.g. AX0 or AX1, receives signals from line cards LC0 and LC1, e.g. “*selected one of the set of any two of the plurality of channels*”). Therefore, Examiner concludes that the combination of MacDonal and McGill teaches the arguable features.

Pages 9-10 of applicant’s REMARKS, applicant argues that the United States Patent No. 5,463,886 (McGill.) is non-citable as prior art against the present application, pursuant to 35 U.S.C. § 103(c). However, the McGill’s reference is prior art under 35 U.S.C. § 102(a) and (e). Therefore, applicant’s attempt to exclude the McGill’s reference by just the exclusion under 35 U.S.C. § 103(c) will not be sufficient to overcome the prior art rejection.

Claims 2-13 and 17-29 are rejected as in Part 5 above of this Office action and by virtue of their dependence from claims 1 and 16.

Allowable Subject Matter

6. Claims 14-15 and 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300

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Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
September 28, 2006



CHI PHAM
SUPERVISORY PATENT EXAMINER 9/29/06